

## Sisyphian Struggle or Pyrrhic Victory?

### Szyfowy trud, czy pyrrusowe zwycięstwo?

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#### Abstract

The first two words in the headline allude to a never-ending pursuit of something which is elusive – say *sustainability*, with this endless and dogged *keeping-on* taking the name *sustainable development*. The last two would indicate that what we are talking about could be a zero-sum game. Whether or not even a *Pyrrhic victory* would be attained when it comes to sustaining the water resources on *Terra Firma*, is difficult to say, realistically speaking. A struggle it promises to be, nevertheless... partly-Sisyphian. As the Norwegian explorer, scientist and environmentalist Thor Heyerdahl said, *Life originated in the sea. All life on land is dependent on the unique hydrological cycle which has been designed so meticulously by Nature. Mankind needs to work together with Nature, so that both are saved.*

**Key words:** climate change, water scarcity, clean water, water resources management, water-energy nexus

#### Streszczenie

Pierwsza część tytułu pracy odnosi się do trwającego nieustannie poszukiwania czegoś co jest nieokreślone – tak, jak *zrównoważoność*, która w tym procesie przyjęła nazwę *rozwoju zrównoważonego*. Druga część tytułu wskazuje na to, że nie można wykluczyć, że to gra o sumie zerowej. Trudno jednoznacznie powiedzieć, czy możliwe jest choćby pyrrusowe zwycięstwo w kontekście utrzymania zasobów wody na naszej *Terra Firma*. Zapowiada się *walka*, która jednak... przynajmniej częściowo będzie miała charakter Szyfowego trudu. Jak powiedział zajmujący się kwestiami środowiskowymi Norweski odkrywca i naukowiec Thor Heyerdahl, *życie wywodzi się z morza. Wszystkie formy życia na lądzie są zależne od niezwyklego cyklu hydrologicznego, który został tak starannie zaprojektowany przez Naturę. Aby przetrwać, człowiek musi z Naturą współpracować.*

**Słowa kluczowe:** zmiany klimatyczne, niedobór wody, czysta woda, zarządzanie zasobami wodnymi, zespół wodno-energetyczny

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#### Introduction

Challenges in the water sector are of a *wheels-within-wheels* nature. Both metaphorically and literally, this doggerel (Venkatesh, 2013) explains what we are up against:

*Rob Peter to pay Paul,  
Pay Peter by robbing his son.  
Plug a leak at Vauxhall  
End up flooding Wimbledon.*

This quartet at once, puts the meanings latent in both the Greek mythology-inspired terms in the headline, in a lighter vein.

#### Janus-faced water

Water is peculiarly Janus-faced. It is a *sine qua non* for existence, but can also spread disease and cause large-scale destruction. Mahatma Gandhi, the Indian philosopher-freedom fighter-savant said in his book *The Bhagavad Gita* that if water can be used for a good purpose, it can also be used for an evil one (Gandhi, 1980). The 15<sup>th</sup> couplet in a compilation in the Tamil language – *Thirukkural* (Project Madurai, 2013), written centuries ago – by the Indian sage **Thiruvalluvar** goes thus, when translated – *Rain by its absence, ruins men; and by its existence, restores them to fortune.* Hark back to pre-Christian era – 400

BC, and the father of modern medicine doctors swear by before commencing their practice, Hippocrates. This is what he said about water – *Whosoever wishes to investigate medicine properly, must consider the water being used by inhabitants – for water contributes much to health.* Over 2 centuries down the line, that goes unchallenged. As gathered from the website – *www.water.org*, in the developing world, 24,000 children under the age of five die every day from preventable causes like diarrhoea contracted from unclean water. The direct and indirect costs of keeping the current deficit of safe water provision in developing countries, such as health-related costs, represent nine times the cost of providing universal coverage, according to a United Nations Development Programme report (UNDP, 2006). Provision of safe water thus, *prima facie*, seems to be a Hobson's choice – if governments are really deeply concerned about the health of their citizens. However, efforts made by entrepreneurial do-gooder technocrats have resulted in the diffusion of hope and happiness among the underprivileged.



Figure 1. 'Lifestraw' being used in Ghana. Picture courtesy: Vestergaard Frandsen, Denmark

Figure 1 depicts a product called Lifestraw and supplied by the Danish company **Vestergaard Frandsen** in the developing world to provide access to safe drinking water, being used by a girl in Ghana. This is a portable, hand-held filter, highly affordable and extremely useful, through which one could suck in raw water (which may be contaminated, at the point of entry), and be sure of ingesting purified water. Scarcity of water is certainly a concern, but abundance is not a sufficient condition for *peace, progress and prosperity* – the three Ps, stressed on by **Dr Bharat Sharma**, Principal Water Resources Researcher at the Colombo-based International Water Management Institute's New Delhi office, in an e-mail communication<sup>1</sup> with the writer. The quality of the water supplied and consumed is as important as the quantities in which it is available. If scarcity of

water is likely to make countries go to war with each other in this century (as stated by **Ismail Serageldin**, former World Bank Vice President for Environmental Affairs, Villiers, 1999) and lead to death and destruction, overabundance in the guise of floods and tsunamis (which are risks vulnerable countries ought to invest in planning for) also wreak havoc of untold proportions. In the former case, water (or lack of it) thwarts peace indirectly, while in the latter, it is a direct agent of ruin. If Serageldin felt that the 21<sup>st</sup> century could see countries warring over water, in year-2000, **Kofi Annan**, the former Secretary General of the United Nations, was quoted by **Peter Swanson** in his 2001-book, *Water: The Drop of Life* as saying, *As I travel around the world, people think the only place where there is potential conflict [over] water is the Middle East, but they are completely wrong. We have the problem all over the world.* The American writer **Mark Twain**, at his satirical best, had written, *Whiskey is for drinking, water is for fighting.* The most valuable stuff in the world, according to *The Economist* (May 22, 2010), is water – and even diamonds and oil are worth nothing in its absence. Yet, ironically, it is mostly unpriced or underpriced! Not always, however. In a global survey conducted by this author over the e-mail (Venkatesh, 2012a), there were some who opined that water was expensive. Interestingly there were some (from India) who never knew if they paid for the water supply and sewerage services at all!

If the Danish company referred to earlier, has been attempting to solve problems related to water quality (and thereby health) in the developing countries, a young Dutch company which goes by the name **Dutch Rainmaker BV** is promoting a technology which produces clean water from air. (Venkatesh, 2014). Using the water-energy nexus in an ingenious way (no electricity consumption at all), the contraption converts wind energy to mechanical energy using a wind turbine, and uses the same to drive a compressor in a heat pump to *squeeze* water out of air – a perfect solution for water supply in remote villages and deserts where women may need to walk for several miles daily just to fetch water. The maximum capacity of this contraption is 7500 litres of clean water per day – not much, one would say, but surely better than nothing, or for that matter, a useful reserve in cases of a rise in need. According to **Gary White**, the co-founder of *water.org*, in a single day, more than 200 million hours of women's time are spent on the most basic of human needs – collecting water for domestic use. This lost productivity, White says, is greater than the combined number of hours worked in a week by employees at Walmart, United Parcel Service, McDonald's, IBM, Target and Kroger. Put differently, about 66% of the households

<sup>1</sup> Bharat Sharma, Principal Water Resources Researcher, International Water Management Institute, New Delhi,

India, in an e-mail interaction with the author, 24 March 2011.

worldwide spend at least two hours daily just to fetch water (Krishna, 2012). Figure 2 serves as an illustration to White's observation.



Figure 2. Two hours spent daily just to fetch water (done by the author himself)

### Have more, will waste

Water has possibly been taken for granted over the years. Its value has been known only when the *well has run dry*, to quote **Michael Gorbachev**. But during the last couple of decades, the long-overdue realization of its importance has slowly dawned upon the world. It behoves one and all to seriously contemplate upon and feel grateful for every drop of water that makes our lives livable in the true sense of the term – individuals, governments and industries. Those who are blessed with abundant supplies should spare a thought for those who pine for even a few litres daily. But ought one to stop at the level of thought? And does abundance justify superfluous consumption? Some have asked me, *What do we do by consuming less or reducing leakages from pipelines, when we are not going to export any of the excess water we have for free to those poor people?* Answering this question is certainly difficult.

One flush of a toilet in the developed world, reportedly, uses as much water as the average person in the developing world allocates for an entire day's cooking, washing, cleaning, and drinking. A resident of the USA, taking a five-minute shower uses more water than a typical person in a developing country slum uses in a whole day (Water.org, 2011). Of course, consuming less water when you are blessed with a surfeit of this resource, seems inconsequential. However, not if one realizes what has been depicted in Figure 3 (Venkatesh, 2012b).

In year-2010 for instance, in the city of Oslo in Norway, 18.2 million cubic metres of water leaked out of the water pipelines. This volume embodied elec-

tricity equal to 6.2 GWh, chemicals (used for treatment) equal to 1.77 million kilograms and greenhouse gas emissions equal to 4 million kg-CO<sub>2</sub>-equivalents (Venkatesh, 2012c). What leaks out is directly proportional to what is pumped out by the treatment plants and thereby directly linked to what the consumers *demand*. So, even if one may not be able to export water by saving it (to people who are impacted by its scarcity on another continent), one could contribute to reducing other global problems which are being jointly encountered by all of us – global warming and climate change for instance. Optimizing consumption will enable one to restrain the rate of enlargement of the global carbon footprint. This is one aspect of the much-banded-about concept of the *water-energy nexus*. How does one make affluent people who may not be bothered by a rise in water tariff at all, to reduce their consumption? By appealing to the goodness which is extant in all our hearts, perhaps?

### Forgetting the past

It is so very easy to forget the lessons of the past. Habits die hard, they say. Perhaps, the reference is only to *bad habits*. Lessons learnt during troubled times – more by compulsion than by choice – are forgotten as soon as the dark clouds part and reveal the clear blue sky and the bright Sun. Good habits ingrained during adversities are considered by many to be *austerities* undertaken to qualify for the renunciation of these very good habits when the adversities vanish. This also explains the economic crises which afflict nations from time to time. It is likewise with water.

That depicts very common behaviour on the part of immigrants and asylum-seekers who move from lands where there is great distress, to lands of plenty (as for instance from Somalia to Norway). But one need not relocate necessarily to exhibit it. Climate change will test people in the years to come. Where there was water aplenty and consumption habits ingrained over time, there may be tremendous scarcity (owing also to the *population bomb*, especially in the developing countries) in the not-too-distant future. The conditions may keep fluctuating in a manner which may not be easy to predict.

I chanced upon an American Indian proverb, pithy and allegorical, in <http://www.stthomas.edu/recycle/water.htm>. It was a quote from *Water Wasteland*, a book published in 1971 and written by **David Zwick** and **Marcy Benstock**. It goes thus.

*The frog does not drink up  
The pond in which he lives.*

If an amphibian can do it, humans can certainly emulate it, if not do better. (Perhaps, being a *frog in the well* sometimes has its benefits?).

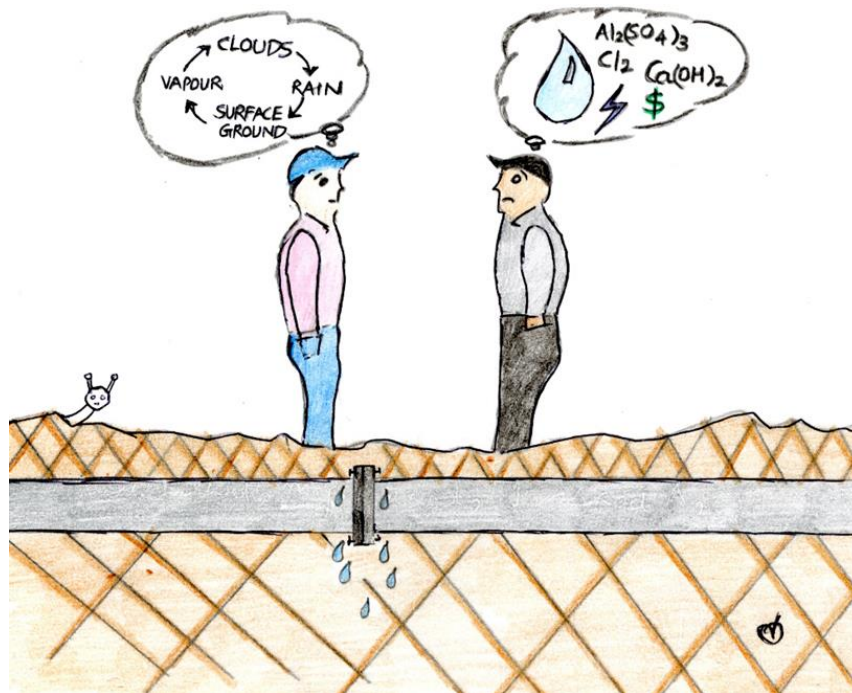


Figure 3. More than just water is lost when it leaks out of drinking water pipelines (done by the author himself)

### So near but yet so far

Lateral thinking often uncovers exciting solutions to water-related problems. Success stories abound. Ideas spring up by the dozen and look great not just on paper, but also as far as technological feasibility is concerned. Yet, there often is many a slip between the cup (of clean water, shall we say?) and the lip. Take rainwater harvesting for instance. In Chennai in southern India, as at the end of year 2009, rainwater was harvested in rooftop tanks in nearly 29,000 domestic buildings and 2000 government buildings, according to Grail Research, LLC (*Grail Research...*, 2009), thanks to political will on the part of the Tamil Nadu State Government. At the time of writing, the numbers would surely have risen. According to the Bureau of Statistics, Government of Australia, in year-2007, 21% of all households in Australia reported that their dwelling had a rainwater tank (Rainwaterharvest, 2012). In this case as well, the percentage would have risen over time.

However, what seems to have happened so easily in some parts of the world, cannot be replicated in others...owing to a host of challenges. For example, it is *interesting* to note that in a survey carried out by this writer (Venkatesh, 2012a) despite the fact that the widespread motive behind installing a rainwater-harvesting tank is to combat the unreliability of rainfall, which impacts the municipal water supplies as well, some respondents pointed to this, as the reason for not installing a tank. Other *excuses* furnished were cumbersomeness of installation of tanks and associated plumbing, suspect quality of the rainwater

harvested, and difficulty in obtaining permission from all the residents of high-rise buildings.

### Shortcuts and conflicts

Water resources management, or for that matter sprucing up the water-wastewater infrastructure, to a politician in the developing world, is at best, a bait to lure prospective voters. Commitment lasts only as long as the attractiveness as a bait remains. There is almost always a yawning gap between regulations on paper, and strict adherence to the same. Venality or otherwise, loopholes are always uncovered.

The applications of all-encompassing water being numerous, more water for one application could mean very less or none for others. More water used upstream in the power sector (hydropower) to meet the burgeoning demand for electricity in the developing world – consumption in industries and households, could mean less available as a habitable ecosystem for fish, and thereby less moolah for fisherfolk and less fish as food on the downstream. If the *upstream* is one country and the *downstream* is a neighbouring country (or some neighbouring countries), one is entering the realm of international politics. As was reported in *The Economist* (2010), *Thailand, Laos, Cambodia and Vietnam complain that China neither consults nor informs them about what it is up to...distracted Thai, Laotian and Cambodian fishermen and farmers who depend a lot on the Mekong river, blame Chinese dams for killing off fish stocks, cutting irrigation and disrupting livelihoods.* How does one decide among electrification,

urbanization and industrialization in China on the one hand, and fishing and agriculture in Vietnam, Laos, Thailand and Cambodia on the other? Perhaps, a modicum of spirituality will help, in a dog-eat-dog world?

### *Quo vadis, wasser?*

The 2003 Stockholm Water Prize Winner **Prof. Dr. Peter Wilderer**, who is the Director, Institute of Advanced Studies on Sustainability, Munich (Germany), in an e-mail interaction with this writer<sup>2</sup> (a foreword he wrote for an unpublished compilation of poems on water), said, *Water is more than the sum of water molecules and the aggregate of pollutants in it. Water is more than the essence of life. Above all that it carries imagination and religious beliefs. There is something mysterious about it.* The Upanishads – components of the Vedas which form the fount of the Hindus' spiritual wisdom, present water as a transcendental enigma.

Yes, needless to say, apart from the three pillars of sustainable development – the socio-cultural, econotechnological and environmental – all the disciplines of education and application in industry, society and government have an impact on the *present* and the *future* of water resources and their relation to the existence of *homo sapiens*. The natural sciences, social sciences and applied sciences apart, metaphysics and even the spiritual sciences overlap, if a true, holistic and comprehensive understanding is what one aspires for.

There was a reference to the *wheels-within-wheels* nature of sustainability at the start of this article. It would be apt to imagine the various disciplines and sub-disciplines as the spokes of the *wheels*. Just as sportsmen from various ethnic, religious and linguistic backgrounds representing a diverse country like the USA or India or the UK, orient themselves towards one common goal – to keep the flag of their country flying high – practitioners of all disciplines need to work together towards the common goal of sustainability in the water-wastewater sector.

As the Norwegian explorer, scientist and environmentalist **Thor Heyerdahl** said, *Life originated in the sea. All life on land is dependent on unique hydrological cycle which has been designed so meticulously by Nature. Mankind needs to work together with Nature, so that both are saved.* Water encompasses all. Water is involved in everything and influenced by everything<sup>3</sup>.

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<sup>2</sup> Prof. Dr. Peter A. Wilderer, Director, Institute of Advanced Studies on Sustainability, Munich (Germany), personal communication with the writer in September 2011.

<sup>3</sup> Attributed to Prof Janos Bogardi of the Global Water Systems Project, who was quoted on Page 12 of the June 2012 issue of *Water21* magazine published by the International Water Association, UK.

